Book notice

Larson, Richard, Viviane Deprez & Hiroko Yamakido (eds.) 2010. *The Evolution of Human Language: Biolinguistic Perspectives*. Cambridge: Cambridge University Press*

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The Evolution of Human Language takes as its starting point the 2002 Hauser, Chomsky, and Fitch paper "The faculty of language: what is it, who has it, and how did it evolve?", and the volume is in fact based on a conference on language evolution organized to address the questions brought up in that paper. *The Evolution of Human Language* is divided into sections on language architecture, language and interface systems, biological and neurological foundations, and anthropological context, and contains chapters contributed by linguists, psychologists, biologists, neurologists, and anthropologists. Although the book's subtitle is "Biolinguistic Perspectives", the majority of *Evolution* is from the perspective of theoretical linguistics and cognitive science, with the biological and neurological topics comprising the smallest of the four sections.

The first chapter of the book is a republication of the Hauser, Chomsky, and Fitch article, in which they attempt to frame and clarify the question of how language evolved as a human trait. They do this first by breaking the concept of language into two parts: the FLB (faculty of language broadly defined), which they define as all the systems involved in language production, many of which may not have evolved for that purpose, and may be shared with other animals; and the FLN (faculty of language narrowly defined), which they define as "the abstract linguistic computational system alone", which has evolved only in humans. Hauser et al. also propose that the underlying mechanism of the FLN is the

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syntactic operation *merge*, which allows for infinite recursion in language and math.

Following this introduction is a section on language architecture. Chomsky opens this section with Chapter 2, his chapter on evolutionary development ('evo devo', as it's called in the chapter title), in which he proposes that human language began as an entirely internal cognitive ability of using abstraction to solve complex problems, which was only externalized as a type of communication system later, due to evolutionary pressures. In Chapter 3, Ray Jackendoff proposes a 4-category breakdown of the faculty of language, from things which are recruited unchanged from the ancestral genome (department 1), to things which are entirely new to human evolution. In Chapter 4, Fitch clarifies his and his coauthors' position on the centrality of recursion to human language from the original paper, and in Chapter 5, Hauser similarly replies to some of the common criticisms and misconceptions about the "faculty of language" paper.

In Part II, cognitive scientists discuss the cognitive underpinnings and precursors to human language. Chapter 6, by Peter Gardenfors and Mathias Osvath, proposes that the ecological niche of human ancestors required an ability to plan ahead that was preliminary to the displacement which underlies symbolic human language. In Chapter 7, Michael Corballis discusses the controversial theory that human language originated as a system of symbolic hand gestures, which only later evolved into vocal communication. Dan Sperber and Gloria Origgi argue in Chapter 7 that the most important cognitive underpinning of human language is theory of mind, without which a minimal symbolic communication system could not become as complex as modern languages.

Part III focuses on the biological and neurological foundations of language. In Chapter 9, Daniel Dor and Eva Jablonka argue that the evolution of language was led by social pressures on the development of communicative skills which were already within the capability of human ancestors due to phenotypic plasticity, and that any genetic changes were only following these skills. In Chapter 10, Massimo Piatelli-Palmarini dismisses the idea that language evolved from a more primitive symbolic,

syntax-less communication system, arguing that judgments about the relationships between items ought to be the focus of investigation into language evolution. Phillip Lieberman uses comparative anatomy, genetics, neuroscience, and paleontology in Chapter 11 in an attempt to determine at what point in our evolutionary history primates with brains with creative and linguistic abilities equal to modern humans first appeared. Chapter 12 by Karin Stromswold discusses what insights into language evolution can be gained by the study of genes related to language and genetic disorders that affect language capacity.

The final section of the book contains chapters on the anthropological context surrounding the evolution of language in humans. In Chapter 13, Ian Tattersall describes how the timeline of the history of *homo sapiens* and other hominids indicates that the neural capacity for language was available to our ancestors long before language itself actually developed, and that it may have been the "discovery" of this capacity which led our species to its explosive success over the decline of other hominids. Chapter 14, by Derek Bickerton, describes a possible evolutionary path of language, as an alternate to the cognition-first theory proposed by Chomsky, in which ecological pressure to recruit conspecifics to aid in the scavenging of dead megafauna led to the evolution of increasingly complex, and necessarily displaced, verbal signals. The final chapter lays out a theory by Paul Bingham which contends that human language is simply a type of "elite" animal communication (as dolphin swimming is a type of elite mammal swimming), most prominently facilitated by humans' extreme social cooperation, especially between non-relatives.

The Evolution of Human Language will be of interest to linguists, biologists, and anthropologists who are looking for a variety of perspectives on what human language is and how it came into being. The chapters are concise and disparate, however, and the volume can primarily be considered a survey of the field, rather than delving into any particular theory of language evolution in great depth. Readers who are looking for an in-depth investigation of a single theory on language evolution are best served by using the book as a jumping-off point for exploring further research on the subject.

REFERENCES

Hauser, Marc D., Noam Chomsky & W. Tecumseh Fitch. 2002. The faculty of language: What is it, who has it, and how did it evolve? *Science* 298: 1569-79

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